

MISCELLANEOUS NOTES

1. THE WESTERN LIMIT OF PIGTAIL MACAQUE DISTRIBUTION IN ASSAM

The pigtail macaque, *Macaca nemestrina*, is found in continental Asia from Assam through southern Burma and western Thailand to the Malay Peninsula, extending to Sumatra, Borneo and the Mentawai Islands (Medway 1970). In Assam it apparently is confined to the Naga Hills (four specimens collected by McCann, 1933), but to what extent does it occur there and elsewhere in Assam is unknown (Prater 1971). Because pigtail macaques are hunted for food throughout most of their range, they are wary and adept at evasion (Bernstein 1967). This predation pressure may partially account for the paucity of observations on wild populations. Their present status in Assam is evaluated here.

In July-August 1971 and December-February 1972-73, I spent 62 days censusing hill forests bordering the Brahmaputra Valley of Assam. Hill tracts of the Garo, United Khasi-Jaintia, Mikir and North Cachar Hills lying south of the Brahmaputra River and the Daffa Hills north of the river were the principal areas visited. Rhesus macaques, *Macaca mulatta*, are common in all of these hill tracts. Their range of habitat varied from the fringes of tropical evergreen and mixed deciduous forest to cultivated tea gardens and temple areas. The pigtail macaque, however, does not occur north of the Brahmaputra and is rare or absent in the south. None were found in the Garo and United Khasi-Jaintia Hills, and interviews with local forest

officers concurred. These results also apply to the Mikir Hills in Nowgong District. The North Cachar Hills in the Barak Plains and the Naga and Patkai Hills in upper Assam, which border Burma, are restricted areas and were not surveyed. Forest officers I interviewed from North Cachar were unsure if pigtail macaques were in their areas, but they apparently do occur in the northern districts of Sibsagar, Lakhimpur and Tirap (P. Baruah, personal communication).

I observed one troop of 26 pigtail macaques in Hollongapar, an 1800 ha evergreen Forest Reserve 12 km south of Jorhat, Sibsagar District (26°70'N, 94°30'E) in upper Assam. These macaques, encountered on nine different days, were easy to observe and exhibited no signs of flight upon my approach. No solitary individuals or smaller groups were observed. The troop kept mainly to the lower canopy (5-10 m high), but some individuals occasionally travelled and fed on the forest floor. Feeding was concentrated on fruits and leaves. Pigtail macaques apparently have extensive home ranges, and whether they are confined entirely to Hollongapar Forest Reserve is unknown. Hollongapar is one of the few stands of evergreen forest outside of the extensive tracts found in the hilly northeast. Thus, this forest, which is about 80 km west of the Naga Hill forests, probably is the western edge of extant pigtail macaque distribution in Assam.

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2. DOMINANT BEHAVIOUR OF A SUB-ADULT MALE LION-TAILED MACAQUE IN SEMI-NATURAL CONDITIONS

In Mundanthurai Sanctuary (8°33'N, 77°27'33"E ; 214M) near the Forest Rest House an orphanage for young wild animals, found abandoned in the forests is maintained. The Rest House is situated at the confluence of two perennial rivers Servalar and Thambaraparani and enjoys a cool microclimate. Two juvenile a ♀ (Rani) and a ♂ (Raja) Lion-tailed Macaques and an infant Bonnet Macaque (Raufali) brought by Rauf Ali were kept in a cage during night, but were permitted to move freely during day. They were fed with milk, eggs, cooked rice, peanuts, plantains and other fruits as prescribed by the Forest Veterinary Officer. Raja and Rani extended affection and exhibited protective behaviour toward Raufali, the Bonnet infant. Without having any familiar relationship of their own they formed a well knit troop, were attached to each other and were tolerant of others ; when visitors touched or gathered Raufali, Raja and Rani objected or resisted. They slept huddled together, Raja and Rani held close the Bonnet infant against their abdomen and breast as mothers would care. Raja carried along Raufali in ventro-ventral position for short distances. Raja was the natural leader and would lead them out of the cage on to the surrounding trees (Tamarind, Neem, *Eugenia Hopea*, Teak, *Albizzia*, *Delonix*) to the roof tops and into the kitchen, Rest house, office room and residential quarters.

During feeding time, morning, noon and evening two Bonnet Macaque troops visited areas around the cage in search of left overs. One was Periappa's troop named after the dominant male Periappa, the other was Rauf Ali's study group. The visiting bonnet macaques often pestered by stealing food given to the Lion-tailed Macaque. An all male Nilgiri Langur troop also visited the Rest House area, though not specifically the cage area. Social interactions between the Lion-tailed Macaque and visiting Bonnet Macaques that occurred in the semi-natural conditions were observed during the period between August 1978 and May 1979 and recorded, whenever observed.

Allogrooming :

Allogrooming between Lion-tailed Macaque and Bonnet Macaques were observed on 54 occasions. This inter-specific allogrooming was noticed between Rani and or Raja *Macaca silenus* with or without Raufali and with visiting *Macaca radiata* troop of which only on 4 occasions Rani was involved. In all the four occasions, Raja also was around. The grooming bouts were of short duration upto 9"-3'3" and within a radius of 50 metres of the cage though Raja and Rani roam about intra-specific grooming is a common interaction within troop among *Macaca radiata*, which showed